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BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS, IRIS,
ORCHID, GESNERIA AND OTHER PLANT FAMILIES
AND MANUAL OF THEIR CULTURE

Many Reduced Prices. New Items Listed. Complete Culture Directions.
A Personal Letter,—to You.

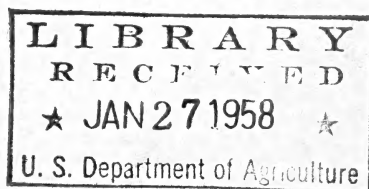
SPRING 1958



CECIL HOUDYSHELE

1412 Third St.

La Verne, Calif.



Return Postage Guaranteed.
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refuse delivery.

Bulk Rate

A Personal Letter — To You.

"The kiss of the sun for pardon,
The song of the birds for mirth,—
One is nearer God's heart in a garden
Than anywhere else on earth."—Mrs. Gurney.

The love of a garden is a human instinct, divinely inspired. Everywhere in literature and in scripture are praises of the garden. Man was first placed in a garden—The Garden of Eden. Only because of his disobedience was he expelled. Getting back into a garden is an approach to God. We do not often think of it this way because the desire is subconscious. "A garden is a lovesome thing—God walks in mine." (T. E. Brown in *My Garden*.)

Among professional men, doctors are more devoted to the hobby of gardening than to any other. Doctors know that it is good for them. They know that it is also good for you. Doctors are the busiest and must go when called—day or night, but they usually take time out to attend to at least a few flowers, the shrubs or a lawn.



Cecil Houdyshel

If you believe that we grow flowers, plants, trees on a few acres of land and in five greenhouses, only for the profit we are able to make, you are wrong. We earned more when a teacher and teaching is not a highly paid profession. When a small boy at Lyons, Kansas my mother had a flower garden and a long row of Phlox Drummondii. I admired them so much that I asked her if I might not take care of them. Thereafter I was the family gardener.

Once, when a student at Kansas University, one of my teachers, Dr. S. Willeston, Department of Historical Geology and a very famous and wise man, gave me some Crinum bulbs. When we came to Pomona in 1905 certain plants there and in near by Covina appeared familiar and I finally recognized them as Crinums. For our origination of the hybrid Crinum Cecil Houdyshel, almost everblooming in warm weather, we received the Herbert medal in 1937.

Crinums are native to all continents and most large islands because they are stream side plants. They are distributed by streams that flow into the ocean and ocean currents carry them into most places having a favorable climate. Both seeds and plants are resistant to salt water. The seeds have the property of photosynthesis and the bulbs send out roots. One or more roots will penetrate the soil. The roots are retractile and pull the bulb erect and even down into the soil a little.

We shall never have a full knowledge or appreciation of all the adaptations that nature—which is part of God, is able to make. Even man possesses adaptability and for that we should adore Him.

Sincerely,
Cecil Houdyshel

P. S. Please note the many new items listed in this catalog including Caladiums, Tigridias, five All American Glads, Lilies as well as African Violets, and don't forget Mrs. Houdyshel rents slides of African Violets, bulbs and other plants, taken at our nursery.

Don't miss the **Pomona Valley African Violet Show** to be held at Fellowship Hall, Church of the Brethren, 4th and E Streets, La Verne. April 21 — 1 to 9 p.m. and April 22 — 10 a.m. to 9 p.m.

C. H.

TERMS AND INSTRUCTIONS FOR ORDERING

Prices in this catalog cancel all former prices. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 4% Sales Tax.

Remit in advance, in full, by check or M.O. No C.O.D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. 1, 2 or 3 cent stamps are accepted for small sums—under \$1.00.

Postal rates have more than doubled but we still prepay all items unless listed "postage extra," when the order is for \$1.00 or more. If under \$1.00, send 25c extra. If you wish to add a little for postage it will not be refused. It is best to do that as there is much talk in Washington about increasing postal rates. When postage extra is required or if sales tax is due and you do not send, we notify you before shipping and charge you 5c for the notice. Thus we both lose. Better to send in the first place.

If you want your order to go **Express Collect** for added safety and protection we include either larger sizes or extras. If by **air mail** we charge the customer only the excess cost above that required by regular parcel post. Estimate this and state you will promptly pay the difference if not enough.

Insurance up to \$10.00, 10c. \$10.00 to \$25.00, 15c. Above \$25.00, 20c. Postal insurance covers all except freezing in transit. **Special Handling** costs 25c up to 2 lbs.; 2 to 10 lbs., 35c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 45c. 2 to 10 lbs., 55c. Over 10 lbs., 70c. Each fee is for one package only.

Wholesale. We give no discounts to dealers. There are several items we can supply wholesale. Send your want list and we will quote our best quantity prices.

Foreign Orders. If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insects and Pest Act, Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. **Important.** A new Canadian regulation requires a Certificate of Health, from our Inspector, to accompany each shipment. To do this he must make a special inspection of each order. He charges us 50c for this which you must pay. Please add 50c to each order for this purpose. This 50c fee applies also to all foreign orders. Many Latin American Countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your postmaster.

Partial Shipments are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting. We must collect from you the fees for Insurance, Special Handling, Special Delivery and all Export fees mentioned above on each partial shipment and on each package of the same shipment if more than one is necessary. Please say that you will pay the difference if you have not sent enough.

We guarantee our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume responsibility if you do not. As necessary **culture directions** are in this catalog, we send none with the bulbs and other plants.

Catalogs. Spring Catalog mailed Jan. 15. Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested please refuse catalog or ask P.M. to return at our expense. Current catalogs are free. If an old catalog is wanted, please send a dime for it.

We ship safely to all parts of the world.

General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizer. We recommend only animal manures, compost and commercial fertilizers that are mostly of organic origin such as **Spoonit**, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use manure (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Little and often is the best rule for fertilizing.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary for their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over-fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, which we list under Garden Supplies.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like *Ranunculus*. In such cases plant farther apart. Bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soil than in heavy soils and in cold climates to protect them from frost. A winter mulch will help protect.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphids, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled. See our listing of **Insecticides** under **Garden Supplies**.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nerines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like *Gladiolus* prefer mildly acid to neutral soils; Bearded Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. Some Texas soils are too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Chlorosis of plants, indicated by lighter green streaks of foliage, may not be due to a virus disease, in all cases. It may indicate lack of all required nutrients, some of which cannot go into solution in an alkaline medium. Among such nutrients are Nitrogen and Iron which are soluble only in acids. Mild acidity is usually best. Iron Chelate in minute quantities often corrects chlorosis. Be careful. It burns if too strong.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A 2½" Amaryllis, for example, needs a 6" pot. A 1½" Eucharis needs a 5" pot. Small bulbs like Ranunculus or Achimenes may have 3 to 5 in a 5" or 6" pot. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely. Only sandy soil will answer this purpose. Add enough sand so that it feels very gritty. The potting soil we like best is about 2 parts of peat or leaf mould and 1 of sand. If peat is used a little woods earth or pure rotted leaves and twigs may be added. Plain dirt, especially if clay is present, or any mixture that becomes lumpy when dry is likely to produce poor results. Mulch surface with wet sphagnum to prevent erosion when watering and too rapid drying at surface. Special directions are given for certain plants with the listing.

Basketing. Vining or pendant plants like Achimenes, Aeschynanthus and several of the other Gesneriaceae, Begonia Lloydii, Ceropegias, etc. look best and do best in our wire baskets, altho they can be grown in pots, suspended by the "Snap-on" pot hangers. Wire baskets allow perfect drainage and we prefer them also for some orchids like Laelias. We offer the best wire baskets made. Painted wire baskets soon rust out. Ours are galvanized, polished, not soldered but welded.

Place a thick layer of wet sphagnum on bottom and sides of basket. It should be well compressed and at least 1" or 2" thick. For the center one can use a mixture of peat, leaf mould and sand—or any soil formula favorable to the plant. For certain Orchids, Episcias and sometimes other plants, we use only sphagnum thruout.

Fertilizers for pots and baskets. The soils recommended above are low in fertility. One cannot add enough to last an entire season. Such an amount would burn the young roots as rapidly as formed. A small quantity of dry, powdered dairy manure is safe but we seldom use it. We prefer to add 1 tablespoonful of bone meal which is slowly soluble and slow acting and a level teaspoonful of blood meal, which is strong and quick in action, to each 6" potful of soil. Too much blood will burn. When plants are in full growth, they may be fed with weak liquid manure, color of weak tea, every three to four weeks. **Spoonit** supplies a more complete ration, better balanced and more convenient. Use of inorganic forms of nitrogen can have bad results.

Sources of Further Information. Always consider the source of your information. Experience is worth more than reading knowledge. Commercial growers usually have had the experience. Please note our **Garden Reference Books**. Join local Garden Clubs. Subscribe for as many Garden Magazines as you have time to read. We especially recommend **The Flower Grower**, Dept. H., Albany, N.Y., **Popular Gardening**, Dept. H, 383 Madison Ave., New York 17, N.Y., **Horticulture**, Dept. H, Boston 15, Mass., **Sunset Magazine**, Menlo Park, Calif., **The Gloxinian**, Elvin McDonald, Gary, Oklahoma.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedia of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. Price \$52.00.

Hortus Second (Bailey). A concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains a few culture hints. Price \$12.50.

Gardeners who desire really scientific information about plants will find it in **Baileya** a quarterly journal of plant taxonomy (classification of plants). Much to our surprise we were honored by a write-up in the June 1957 **Baileya**. We can supply copies of this 40 page issue for 50c and if you add 10c for postage it will not be refused. Mrs. Houdyshel is given credit for her part in the success of our establishment.

Amaryllis and How to Grow Them, by Peggy Schulz. This book was written for amateurs and by a well known amateur. It contains much useful information. 128 pages, many line drawings, photographs and two colored plates. \$2.95.

Bulb Magic In Your Window. 100 bulbs to grow in your window, from Achimenes to Zephyranthes. 214 pages. 3 color plates and 42 full page illustrations. Complete growing instructions. \$3.95.

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson. 238 pages. Price, \$3.00.

The New Greenhouse Gardening for Everyone, Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. \$4.75.

How to Grow Rare Greenhouse Plants. A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

Geraniums, Pelargoniums, by Helen Van Pelt Wilson. 248 pages, 7 color plates, many drawings and illustrations. Best book on this subject. \$4.50.

Gloxinias, and How to Grow Them, by Peggy Schulz. Illustrated by colored plates and line drawings. Many Gloxinia relatives discussed, 128 pages. \$2.95.

Growing Plants Under Artificial Lights, by Peggy Schulz. 146 pages. One color plate and many illustrations. \$3.50.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$3.50.

Brief culture directions for Orchids, including Cattleyas, Cymbidiums, Cypripediums, and others are given in our 1949 Orchid Price list. All listings in this six page folder are cancelled, prices are much lower now. Price 25c. Our booklet, "How To Grow Orchids" is being reprinted. Price 75c. Available about Feb. 1.

The Iris 400, 1949 to 1951 price lists give good culture advice and tell how to get abundant bloom every year. Present Iris prices are lower. We have no recent price list. Six pages. 25c.

The Complete Book of African Violets, by Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$3.50.

How to Grow African Violets, by Carolyn Rector. 62 pages, paper-board covers. Illustrated. How to grow from seed, prepare potting soils, pollinate and hybridize, control pests, diseases, groom plants for show and grow from leaf cuttings. \$1.50.

An Easy Guide to African-Violets, by William L. Meachem. For beginner or expert, it is all here — an easy guide to an absorbing hobby. 61 pages. \$1.95.

Arranging African-Violets, for home decoration, by Emily Stuebing. 111 pages with 40 original halftone illustrations. \$2.95.

Garden Supplies

Postage Extra is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Many do not and we must write for it. Here is how to find it. We are very near Los Angeles. Call your P.O. and ask the cost of postage on the packed weight given from your P.O. to Los Angeles and send us that amount. Since all types of orchids except cymbidiums must

be shipped in pots or wire baskets they cannot be mailed. We ship them express f.o.b. The minimum cost is \$1.85.

Vio-Vim, a fungicide and bactericide for African Violets. 75c prepaid. Its effect is apparent in the stimulated growth of the plant.

Isotox. Improved Isotox Garden Spray M. For African Violets use 1 teaspoon to one gallon of water. Mix well. \$1.19 for 4 oz. bottle. By mail add 20c for postage and packing, plus 5c Sales Tax in Calif. Wonder Garden Spray, \$1.30, postpaid, plus 5c tax in Calif.

Fermate. Du Pont "Fermate" Ferbam Fungicide is highly effective against many fungi, safe on a wide range of plants. \$1.10 postpaid. Californians, don't forget 4% sales tax.

We assume no risk for results with insecticides. Read instructions carefully.

Spoonit is the fertilizer we use on African Violets and on all house plants. A new, improved formula is now available. **Analysis:** nitrogen, 18%; phosphoric acid, 20%; potash, 16%. To use, dissolve level tablespoonful in 1 gal. water or level teaspoonful in 1 qt. Give Transplants half strength. Apply every 3 or 4 weeks. It never burns. **Prices:** 6 oz. package 60c plus 8c postage. 15 oz. pkg., \$1.25, plus postage on 1 lb. (See paragraph 1 above.) 2½ lb. pkg., \$2.50 plus postage on 3 lbs.

Black Magic, African Violet Mix. The users praise it. 8 oz., price 59c plus postage. Dampen before using.

Horticultural Peat. High quality. 3 lbs., 50c, f.o.b. Send postage for 4 lbs.

Sphagnum Moss. Best we can get. 70c per lb. gross weight. Postage extra, for 1 lb.

Plant Labels. The following are plastic labels, easily written upon with pencil. **Pot Labels**, length 4½", 35c doz. Length 3½", 30c doz. Small labels for African Violets, 2" long, 20c doz. **Orchid Labels**. Perforated on one end, but without wire or cord, 2½", 30c doz. **Aluminum Tree Labels**. Emboss name on label with sharp pencil or ball point pen. Two sheets of Aluminum make this strong and permanent, with wire to tie on, 35c doz. Package of 50, \$1.00. On orders under \$1.00, send 25c extra.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price, with hangers, 8", \$1.00 ea., \$11/doz. 10", \$1.25 ea., \$13.50/doz. 16", \$2.75 ea., \$25.00/doz., postpaid.

Snap On Pot Hangers, for hanging any size pot. Galvanized. 50c ea., \$5.00/doz. Three or more, postpaid. On less, send 10c ea. for postage.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits ½" pipe. Adjustable fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$1.36. If by mail add 10c. Hose end foggers are no longer available.

Rootone with Fungicide—Stimulates roots, controls soil diseases. Dust seeds, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. 2 oz. jar \$1.00.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning**. Do not soak dormant bulbs in Vit. B-1. It rots them.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the species (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full.

THE AMARYLLIS FAMILY — Amaryllidaceae

This Family includes the following bulbs, Agapanthus thru Zephyranthes.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening of interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub of the U.S. Dept. of Agriculture, (now retired) the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present increased costs these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.50 per year, which you may send to Thomas W. Whitaker, Executive Secy., Box 150, La Jolla, Calif.

The Society also publishes the following book, bound in Manila paper.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888. Order from Mr. Whitaker.

Agapanthus, Blue Lily of the Nile. They flower here in June to Aug. In the north they must be grown in large pots or tubs and wintered in a frost free room. Plant in full sun exposure in any good sandy garden soil that drains well.

Agapanthus longispathus. Similar to well known *A. orientalis*, but smaller and earlier to flower. Profuse bloomer. For pot growing. 50c, 3 for \$1.25.

A. orientalis. Dark Blue. Larger than longispathus. Superior clone. \$1.50.

A. orientalis. Sky Blue. 75c.

A. orientalis alba. Pure White. \$2.00.

A. von Wellighi hybrids. Selected clone. A giant type, very large, round umbel of blue flowers on a tall stem. Late flowering, extending the season. \$2.50.

Amarcinum Howardi. Bigeneric hybrid of *Brunsvigia rosea* and *Crinum moorei*. Beautiful, fragrant, pure pink fls. Fall bloomer. Culture like *Crinums*. Hardy to So. Indiana. Large bulbs, \$2.50. Sm. \$1.25.

A. Dorothy Hannibal, a Les Hannibal organization. A new introduction. Like *Crinum Cecil Houdyshel* it flowers in all seasons. The flowers are a very pretty pink. Price, \$7.50.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they may be planted deeper in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids." Amaryllis must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough. The most common error is lack of sufficient moisture. They are endemic to the tropics and in many cases, where there is almost daily rain. The soil should contain much humus. Add well rotted manure and if not slightly acid, add some peat but do not acidify the soil with sulphur or aluminum sulphate. We do not advise planting imported, greenhouse grown bulbs in the outside garden. They seldom do well outside.

In Pots. A 2½" bulb requires a 6" pot. Give a 3" to 3½" bulb a 7" pot. Remove dead roots but every vestige of living root should be left on. Our best success in flowering

Amaryllis and in growing them on to larger, better bulbs is in a soil mixture composed of clean, sharp sand one part by volume and a mixture of pure organic material two or three parts. The latter may be pure peat or about half peat and half well broken up or decayed leaf mould, woods earth or completely reduced compost. The final mixture should have enough sand to feel very gritty. Such a mixture drains quickly but retains enough moisture around the roots.

To this mixture we add a tablespoon of bone meal and a level teaspoon of blood meal for each 6" pot. This is enough fertilizer until after bulbs have flowered.

One curved piece of pot over pot hole is sufficient for good drainage. Cover this with a layer of wet sphagnum. Set bulb in soil and mulch top surface with a layer of wet sphagnum. The neck and about $\frac{1}{2}$ of bulb should be above soil surface. This surface should be $\frac{1}{2}$ " below pot rim. In potting carefully spread out all living roots as they are a great advantage to bulbs. Such bulbs will start more quickly and may be given a warm temperature at once. If there are few or no living roots on bulbs, set them first in a cool place, about 50°, for roots to form and growth start.

We water at once and again when growth has started. With mixture above advised, one is not likely to over water tho you should be a little careful at first, if the bulb had no living roots. For as long as they will grow, potted Amaryllis need frequent watering. They are not only heavy drinkers but gross feeders. If you give liquid manure or Spoonit every 3 weeks, it will be about right. It is also good to vary the diet.

Amaryllis like the sun. If the foliage fades the sun may be too strong or you may not be watering enough. In mid summer in our greenhouses we usually have to apply a little shading to the glass, partly on account of temperatures which may go to over 100° even in our air conditioned houses. Whitewash shading can be washed off when cooler weather arrives. In the house, give them a sunny window. Keep the bulbs growing vigorously until fall, Oct. or Nov. When outer leaves begin to go down, buds have been formed for next season's flowers and bulbs may be dried off and stored in a cool place. Inspect frequently. For early flowers, dry off about Nov. 1, or earlier.

This describes the method we used. $2\frac{1}{2}$ " to $3\frac{1}{4}$ " bulbs potted from Dec. to about Mar. increased in size. A few burst their 7" pots. Some became fully 5" in diam.

A. ambigua. Lily shaped, white flowers with pink markings, on tall straight stems. 5 to 7 flowers in an umbel. The exquisite spicy fragrance perfumes the entire garden. Plant 4" deep in garden in south, to Okla. Believed to be a natural hybrid of *A. elegans* and *A. vittata*. \$2.50.

A. bifida. Formerly known as *A. advena*. **Ox-blood Lily.** This is a fall bloomer. Hardy to So. Ind., Ill., Mo., Kansas, etc. There are 5 to 8 dark red fls. in an umbel. Not suitable for pots. 50c ea. \$4.00/doz. 100 smaller, blooming sizes, \$12.50/100. June Delivery.

A. psittacina. The parrot colored Amaryllis as the name indicates. It comes from S. Brazil and blooms in winter here. The frost usually ruins many of the flowers. The green tinted flowers with carmine lines and edges are very attractive and unusual. The bulb is very large and long necked. This species is hard to get and we have few. Price \$9.00. It does well in pots.

Hybrid Amaryllis. The Howard and Smith strain is considered to be the best American strain. These are grown from seed produced by moving selected field grown bulbs to greenhouses. There they are hand pollinated with each other and with a large stock of Dutch varieties. The resulting seedlings are field grown to flowering sizes. In the field, weak varieties perish. The surviving bulbs are thus far easier to grow outside in the south than imported, greenhouse grown bulbs.

Assorted Colors. These include White Backgrounds, various shades and markings of red, pink, scarlet, rose, etc. 2" bulbs usually flower. **Prices.** 2"- $2\frac{1}{2}$ ", 60c, $3\frac{1}{2}$ " \$1.75. $2\frac{1}{2}$ " to 3" diam., 90c ea. $3\frac{1}{2}$ " \$2.50. 6" \$4.75. 12" \$9.25.

Hardy Hybrids. These are not hardy outdoors in the colder states but as far north as North Carolina, Washington, D.C., and Oklahoma these have proven winter hardy if covered by 4" of soil and given a good winter mulch of straw.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors will be most welcome. 2½" price 75c ea. \$7.00/doz. \$50.00/100.

Dutch Hybrids. The most perfect of all Amaryllis, in form, coloring and size of flowers are the Royal Dutch or Warmenhoven strain and the Ludwig strain. These we import from Holland. They represent the highest development of the Leopoldi hybrids, having more nearly flat flowers and shorter trumpets. The colors also have been developed into the most exquisite shades and in solid colors.

Ratings. Many of the following varieties have been tested at Valleeuev Test Gardens, Cleveland, O. Known ratings are given. The highest rating is AA. Dutch growers have reduced prices and we therefore lower ours.

Royal Dutch or Warmenhoven strain:

Bordeaux. A. Bordeaux or deep wine red. \$5.25.

Lucifer. The darkest red, fine contour and large size. A gorgeous flower. \$6.50.

Queen's Page. AA. Fls. over 8", delicate salmon color. Very wide round petals and a perfect contour. \$5.75.

Salmonetta. A. Bright salmon-pink, shaded orange in throat. 8" flowers. \$5.75.

Sweet Seventeen. B. 9" fls., salmon-rose pink. A favorite. \$6.25.

Violetta. Violet tinted rose. Unusual color, large fls. \$5.25.

Ludwig Amaryllis:

American Express. AA. 8½" fls., rich orient red. Easy to grow and flower. \$6.50.

Doris Lillian. A. 7½" fls. of deep carmine rose. Perfect contour. A beauty. \$8.00.

Miss Margaret Truman. AA. 8" fls. of porcelain rose or rose pink of great beauty. \$8.00.

Roselinde. 7" nicely rounded fls. of carmine rose pink, lighter in throat. This is a very good pink at a low price. \$5.50.

Snow Queen. B. 7½" pure snow white fls., with minutely waved edges which add to its very refined appearance. \$5.50.

Van Tubergen Pinks. These are not all solid colors but they are the nearest true pinks I have seen in Amaryllis. We have very few and I will be unable to get more. \$7.50.

Seedlings of Dutch Amaryllis. We have made some crosses and all bulbs are of high quality and equal to imported bulbs. All are in red shades. \$4.75.

Pink Favorite seedlings. Small bulbs \$4.00.

Queen's Page seedlings. \$3.50 ea.

Violetta seedlings. \$3.50.

Sweet Seventeen seedlings. \$4.00.

We have other varieties of Dutch Amaryllis in small quantity. Price, our selection only, labelled with name, \$4.00. A few, equally good, are accidentally unlabelled. Price \$3.50. The bulbs in these two lots are not subject to any quantity discounts.

We believe the above list and the prices are truly a new deal for those who love Amaryllis. We have a 24 ft. x 36 ft. greenhouse crowded by Amaryllis. We are confident we serve you well but suggest you name substitutes on late orders.

Another Special, Dutch Amaryllis. We have some smaller bulbs that we believe will flower next season. Some of these are named, others are seedlings of highest quality. These are sold unlabeled. Price \$2.50.

Dutch Hybrid Amaryllis Seed. We have a small amount raised in our own green-houses. Price 8 seed for \$1.00. Send self addressed envelope.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The orange flowers are produced in umbels of 10 to 25 in March and April.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 6" to 8" for small plants and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil as described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open soft yellow orange fls. \$1.00, \$2.00 and \$2.75. Only the \$2.75 is likely to flower.

C. cyrtanthiflora. The flowers are tubular and long, yet they are so numerous that they fill a large umbel and make a beautiful floral display. They are distinctly different from other Clivias also in their time of flowering. There is not a month in the year when we do not sometimes have flowers. Price, \$15.00.

C. European Hybrids. We formerly listed these as **Nobilis hybrids**. Evidently the species Nobilis is not an ancestor and we acknowledge our error. The large flowers have well rounded petals of red-orange and the wide leaves are ornamental. This is the most desirable of all Clivias. Selected fine large plants, blooming size, \$6.50.

Most **Crinums** are large bulbs and plants tho a few are no larger than an Amaryllis. They are very popular in the south and are a common sight in southern gardens. Among trees and shrubs they are indispensable.

The lovely lily-shaped flowers are useful to florists especially those who must grow most of their own flowers. They are particularly nice in a wreath.

Culture. *C. bulbispermum* is hardy in the north, but there it should be planted 6" or more deep and mulched in winter. *Crinums moorei*, Cecil Houdyshel and *Powellii Alba* are equally hardy.

The ideal situation is among trees and shrubs, in a sandy soil but all except *moorei* can be grown in full sun exposure and in heavier soils. There should always be much leaf mould and peat incorporated in the soil—especially if heavy. The alkaline California soils need the addition of peat for growing *Crinums*. If your *Crinum* foliage becomes blotched with lighter green, as in the case where plants are infected with mosaic disease, the addition of much peat to the soil will lower the pH and probably cure the plants.

Crinums succeed in large pots or tubs but most of them require too much space for house or greenhouse growing. Tubs can be stored over winter and set outside in summer. In the south the bulbs may be planted very shallow. Keep always wet when growing.

***Crinum bulbispermum*.** We have sold this as "capense," then as "longifolia" but botanists give priority to the present listed name because first given. We are out of the white form, *alba*, and offer only the pink, *rosea*. 50c. Good blooming size, \$1.00.

C. campanulatum. Belongs to the "Milk and Wine Lily" type. That is, the flowers are white with a bright rose stripe thru center. \$1.00. Very large, \$1.50.

C. Cecil Houdyshel. Flowers deep rose pink. One of the best hybrids, all qualities considered. It has the same parents as C. Powellii. Instead of flowering only once, like Powellii, this hybrid has been known to give 12 or more flower scapes in one year. A large clump will give continuous bloom from spring to fall. It is hardy as far north as Independence, Mo. If planted 8" deep (to bottom of bulb) and heavily mulched over winter it has survived 10° below zero. Ralph Waldo Emerson, of Brooklyn, L.I., reports that his bulb has survived two winters and flowered two seasons. Spring is the best time to plant Crinums in the north. Thus they become well established before fall and are more winter hardy. Plant any time in the south.

Prices reduced. Blooming size, \$1.50. Large, \$2.00. Jumbo bulbs, \$3.00 and \$4.00 each. The jumbos are very large and require a lot of postage. They increase very rapidly and a jumbo size soon makes a large clump.

C. Ellen Bousanquet. Large, glowing, dark wine red flowers. A very beautiful crinum. \$1.00 and \$1.50.

C. Elizabeth Traub. We are introducing this new crinum, the origination of Dr. Hamilton P. Traub. It was obtained by crossing C. scabrum and C. Ellen Bousanquet. The flower color differs a little from the latter and the plant is much more sturdy. It makes offsets more freely. The culture is much easier. Those interested in Crinum breeding should try crossing this on C. Cecil Houdyshel. The latter makes a few seed and it can be done. We can not spare more than 5 bulbs, order early if wanted. Price \$10.00.

C. Erubescens. Milk and Wine Lily. Red purple center stripe on petals. 75c to \$1.50.

C. H. J. Elwes. Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Med. \$3.50.

C. kirkii. One of the most desirable of "Milk and Wine" type. White flowers with red center stripe. The large umbels have many flowers open at one time. \$1.25.

C. latifolium. This species is usually known in horticulture as C. yemense. The pure white flowers are very large and attractive and fittingly adorn an unusually attractive plant in June to July. \$3.00.

C. Louis Bousanquet. Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. \$1.50.

C. Moorei. Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves gives the plant great decorative value. Requires shade. Nearly as hardy as bulbispermum. \$1.00 and \$1.50.

C. Peach Blow. Exquisite large pink flowers. Free flowering from largest bulbs. A valuable hybrid. \$6.50. Probably tender.

C. Powellii alba. Extra fine pure white. One of the most valuable and beautiful Crinums. Small 50c. Good blooming size \$1.00. Largest, \$1.50.

Cyrtanthus Henryae, Richard Warrill. A fine hybrid by Mrs. Henry. Everblooming, salmon red. Soil and culture like Amaryllis but no dormant season. Very rare. \$3.00.

Elisena longipetla. Very rare and lovely Peruvian amaryllid. It is related to the Ismene but the pure white flowers are far more delicate and graceful. Culture like Ismene. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like Glads. It is hardy in the middle south. It may be crossed with Ismene. \$1.50.

Eucharis amazonica (or Grandiflora). Eucharist Lily. Star of Bethlehem. First collected on Banks of Rio Magdalena, Colombia, S.A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. For pots only. We grow in 5" pots and shift to larger when too full, but crowding encourages bloom. We use exactly the same soil as for Amaryllis, including a tablespoonful of bone meal to a pot. Because they need abundance of water when grow-

ing vigorously and blooming, the drainage must be perfect. They are shade plants but need strong light and some sun, when growing well, to develop flowers. Keep them well fertilized with liquid fertilizer. We use Spoonit. As growing plants, in foliage, they may be transplanted and go right on growing, this is the better way. Dry bulbs start very slowly and this method will save you much time. When received, pot at once and give full shade for a week, then gradually give a little more light and finally more sun. Keep them growing vigorously for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. Or you may not have given them enough sun. Experienced growers get as many as four crops of flowers in a year. Eucharis are tropical plants and 65° is the best minimum night temperature. Our bulbs were over 2" diam. when potted. Growth of foliage reduces this a little. Price, out of pot, postpaid, \$3.00 or f.o.b. in pots by express, \$2.50. Delivery by mail only in warm weather.

Habranthus bloom several times a year and at most any time. Culture like Amaryllis. After good growth, if allowed to get rather dry for a period they will usually flower after a good watering. Umbels have but one flower. **H. brachyandrus**, lavender purple fls., 75c. **H. robustus**, pink lavender, 60c.

Haemanthus. The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be as for Amaryllis. They should have about half sun exposure. Pot with bulb only lightly covered.

Haemanthus produces red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this frequently as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf. Species are easily crossed to produce hybrids if anthers of mother plant are removed before ripening of pollen. Store pollen in advance in small stoppered glass phials, in refrigerator at 45°.

H. coccineus. The true Blood Lily, altho all Haemanthus are known as Blood Lilies. The umbel of scarlet or blood-red flowers comes in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Flowering sizes, \$2.00 and \$3.00. Extra large, that should give two scapes, \$4.00.

Order now and we can deliver about June or July.

H. carneus. A small species that is winter growing like coccineus. Flowers are pink to flesh colored in an umbel on a 6" to 8" stem, in July. Two short, prostrate leaves follow the flowers. \$2.50. Delivery, late spring when dormant, but not after July 1.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in diam., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 7" to 9" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Our stock is limited. Price \$6.00. Largest size, \$8.50.

H. multiflorus. In general appearance, it resembles Katherinae. Stem heavily spotted brown. This species is ideal for pots as it is more tropical and more tender. Blooms earlier. Flowers are described by botanists as blood-red but you may disagree. This exquisite species has been sold by florists for \$25.00 when flowering. Try crossing it with Katherinae. Blooming size, \$5.00. Largest bulbs, \$7.50.

We ship *H. Katherinae* and *H. multiflorus* as soon as safe to mail. *H. multiflorus* is often not dormant until about Mar. 1. At present we do have dormant bulbs of *H. multiflorus*.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced thru a long period that "beautiful every day" would be more apt, as a collection of several sorts shows masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

Hemerocallis Araby. 30". E. (evergreen). A lovely, pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

H. Chengtu. E. Brilliant coppery orange-red with carmine mid-zone. 36". July-Sept. 50c.

H. Cinnabar. E. Cinnamon, sprinkled with orange, gold-glistening. 30". July-Aug. 50c.

H. Dauntless. E. Cadmium yellow. Fulvous red blended in mid-zone. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 50c.

H. Evangeline. 40". Large, rosy flowers with purple eye zone. Early. 75c.

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. Hyperion. 36". Large canary colored flowers on long straight stems. Fine. Jul.-Aug. 75c.

H. Iris Perry. E. 36". July-Sept. Orange-bronze. 50c.

H. Kanapaha. A lovely cardinal red self, with raspberry suffusion. \$2.00.

H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.

H. Linda. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. Mandarin. E. 48". Lemon yellow. June-July. 50c.

H. Margaret Perry. E. Brilliant orange-scarlet. 4 ft. July-August. 35c.

H. Modesty. 36". Large, pale, creamy yellow. Our nearest white. 50c.

H. Nubiana. E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 50c.

H. Patricia. 30". Pale yellow, large fragrant flowers. July-Aug. 50c.

H. Purple Waters. Rich wine, 50c.

H. Old Vintage. 42". E. A profuse bloomer of very deep wine colored with golden throat. May to July. \$1.00.

H. Ophir. A fine large, deep golden yellow. 60c.

H. Radiant. 42". Rich orange. June-July. 50c.

H. Rosalind. Famous pink Daylily. Pastel pink. \$1.50.

H. Rosita. E. 36". Near Carmine, tinted copper. Part shade best. \$1.00.

H. Royal. E. 40". Beautiful golden yellow. Fine texture. July. 75c.

H. Royal Ruby. All agree it is the finest red, to date. 40". July-Aug. \$2.50.

H. Serenade. 48". Rose on apricot cream. Faint dark overcast. June-July. 75c.

H. Sibyl. E. Dark red-purple petals, lighter sepals. \$2.00.

H. Soudan. 36". Lemon yellow. Broad, wavy petals and sepals. June-July. 50c.

H. Spitfire. 30". E. Fiery red with yellow mid-rib and throat, blooms continuously. Medium size. \$1.00.

H. Vesta. 30". Deep orange with glistening gold sheen. May-July. 50c.

H. Vulcan. E. 30". Darkest maroon red. July-Aug. 50c.

H. Wau Bun. Large apricot, sprinkled fulvous-red. The twisted and curved petals add gracefulness to its beauty. 75c.

Complete Collection. The entire list of 34 varieties are priced singly for \$27.50. They will be labelled with permanent aluminum garden labels, an added value, for \$24.75. If by express, f.o.b., we will send larger divisions.

Ismene. Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."

Culture. They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot. Even in the south they must be covered by 4" of soil. Ismenes can also be grown in pots. See also their close relative, Elisena.

Ismene calathina. Type variety. 35c. Special price, \$2.00/doz. 100 for \$12.00 post paid or for \$10.00 f.o.b. express.

I. festalis. An Ismene-Elisena hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white Amaryllid is more elegant. The true variety, \$2.75.

I. Sulphur Queen. Hybrid of I. calathina and I. Amancaes. Light yellow. Very rare, beautiful and most desirable. \$1.00. Large \$1.50.

I. macleana. A very tiny Ismene on long stems. Probably the hardiest. 75c.

I. Olympia. The giant among Ismenes and it is magnificent. The huge flowers are tinted yellow when first opened. Bulbs become very large and propagation is slow, hence they are expensive. Price, \$2.50, for blooming size.

I. Advance. Improved form of Calathina. \$1.00.

Ismene Collection. One bulb of each, 6 varieties, \$8.25.

Lycoris and Nerine are listed in our fall catalog. If you wish to order early and have our fall 1957 catalog, you may do so. If you have no fall catalog, send 10c for a copy.

Lycoris radiata. June or later delivery. 25c ea. 5/\$100. \$2.35/doz.

Sprekelia formosissima superba. Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like Amaryllis. 50c ea. 3/\$1.25. \$4.50 per doz.

S. formosissima, type variety. Similar color but slightly variable. 75c ea.

Sternbergia lutea. A small, yellow flowering, winter growing Amaryllid, often called "Fall Crocus." Culture like others of this type. Plant 3" deep. They are only a little short of winter hardy in the north and should succeed in protected situations in warmer sections of the middle south as far north as Philadelphia. 50c ea. \$3.50/doz. Delivery June or later.

Tulbaghia violacea. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. \$2.00 per doz.

T. fragrans. This species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room with a few flowers in summer. It has larger fragrant flowers than violacea, in the same color. Evergreen. Special price. \$1.00.

Valloa purpurea. Scarborough Lily. Large funnel shaped, scarlet flowers in late fall. Slightly difficult for inexperienced gardeners but very desirable. Grow in pots same soil as for Amaryllis with bone meal added, and top of bulb covered by 1" of compost. We can't guarantee our bulbs to flower this fall or at any time. Suggest you feed them with Spoonit or other liquid fertilizer. They are evergreen and must not completely dry off in winter. House or greenhouse culture is advised. They are a challenge to your gardening ability. Price \$7.50. Out of pots, postpaid or in pots (best way) f.o.b. express. We have very few and don't know where to get more.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north, dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

Z. Ajax. Hybrid. Described as light yellow but seldom do you see one that is more than pale cream. Years ago we grew a great number of seedlings and selected the deepest yellow we have seen. It is really medium yellow and its seedlings are similar. \$1.00 each.

Z. candida. Pure white, evergreen. The masses of white flowers in late summer make them outstanding in a bed or edging for border. Half hardy and easy in pots. 2 for 25c. \$1.00 per doz. Per 100, \$5.00.

Z. Grandiflora. The largest Zephyranthes. In the south its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 20c each. \$1.75 per doz.

Z. rosea. Small, but very lovely deep pink flowers. Fine in pots, about 8 in a 5" pot. 20c ea. 8 for \$1.50.

Z. Sulphurea. Deep yellow. 25c ea. \$2.00 doz.

The Alliae, or Onions, are now classed in Amaryllidaceae. The following are ornamental and useful for seasoning salads, soups or meats.

Allium schoenoprasum. True Chives. Small clumps. 15c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. Sm. 2 for 25c. Large 25c ea.

IRIS FAMILY—Iridaceae

The Iris is the type genus of this family. Bearded Iris and Gladiolus are the outstanding members. Maricas are lovely and curious house plants, truly "out of the ordinary."

Tall Bearded Iris. No garden is complete without Bearded Iris. When in flower call at our gardens and pick out colors you want. **Special Offer.** If you do not care for names, we offer surplus rhizomes, 20 to 30 var., no labels, 100 for \$8.00, f.o.b. express. If by mail, send postage for 12 lbs. **Collection** of 10 fine varieties, our selection, \$2.50. 20 varieties, labelled, \$4.50.

GLADIOLUS

How to Grow Gladiolus. Glads planted Jan. 1 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the East) are reasonably sure to escape the attack of thrips.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster and Chlordane can be bought from most local feed or seed stores. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants, cut worms, wire worms, etc.

Dust Gladiolus 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

If you cannot get it locally we can supply 1 lb. package for \$1.00, postpaid. If in an express shipment price 60c. This Chlordane Kil Dust 5 kills nearly all pests.

Many will prefer to spray instead of dusting. For spray use "Thripocide" which we list under "Garden Supplies," 4 oz. for \$1.20 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good *Gladiolus*. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

New All American Glads. Every garden should have these new Glads as well as the older varieties.

Apple Blossom. (Patented) Is white with rose-pink edges. A real beauty. An easy grower that performs excellently with only average culture.

Caribbean. (Pat.) Is a light blue with throat of cream and white. Sparkling color, ruffled. A top performer in every way.

Emperor. (Pl. Pat. Pending) Is a robust grower, royal purple with light throat. A rich, distinctive color. Makes majestic spikes that grow very tall.

Maytime. (Pat.) Is a real stunning pink with white throat. Delightful for arrangements. Ruffled and healthy. Remarkably easy to grow.

Royal Stewart. (Pat.) Is a he-man red, straight and with 8-10 open at once. An outstanding winner of top awards.

Prices 50c each. All five—1 of each \$2.25. \$5.00 for twelve.

Prices are for one bulb. Multiply by 10 for price of one doz. 6 at doz. rate. 100 cost 70 times the cost of one or 7 times the cost of one dozen.

Our bulbs are grown in rich soil, on the heavy side. They are not always as nice looking as bulbs grown in the thinner sandy soil. They often perform better and we guarantee them to grow well. They are priced lower than usual prices. We believe we have enough of all but it's wise to name substitutes. All are good blooming size.

Burma. Deeply ruffled, dark rose red. Opens 7 fls. at one time. 8c ea. 80c doz.

Capeheart. Early salmon rose pink. 6c ea. 60c doz. \$4.00/100.

Chamouny. Beautiful bright rose with silver edge. 6c ea. 60c doz.

Corona. Cream with rose edge. 7c ea. 70c doz.

Elizabeth The Queen. Deeply ruffled, large fls. considered the most beautiful lavender. 10c ea. 90c doz.

H. B. Pitts. Very fine large orange pink. 7c ea. 70c doz.

Hopman's Glory. Yellow. 7c ea. 70c doz.

June Bells. Earliest white. Tall, with large very beautiful ruffled fls. 8c ea. 70c doz.

Los Angeles. Small grenadine pink fls. 7c ea. 70c doz.

Mauve. Our recent introduction of this unusual color. 7c ea. 70c doz.

Pinocchio. Most unusual color, blending to pink, yellow, green, orange and red. Intensely ruffled and fluted. 10c ea.

Red Charm. Pure med. dark red. Opens 8 to 9 at one time. 6c ea. 60c doz.

Snow Princess. Early, pure white. 7c ea. 70c doz.

Spic and Span. Tall, ruffled deep pink. Up to 10 open. 8c ea. 80c doz.

Assorted varieties. No. 1 to Jumbo, \$1.00/doz. \$7.50/100, postpaid, or \$6.00 Express Collect. Nos. 2 and 3, fine bloomers, 50c/doz. \$3.50/100. On 100 we must send mostly No. 3 to customers beyond our 4th postal zone.

Miniature Gladiolus. Like a miniature carving, a cameo or fine lace, they are dainty, beautiful and alluring. Fine for cut flowers. All are good blooming size bulbs.

Fairy. Light lavender pastel. Dainty. 15c. \$1.50/doz.

Kriss Kringle. True Christmas red. 15c. \$1.25/doz.

Starlet. Tall ruffled white. 15c. \$1.25/doz.

White Butterfly. By Kunderd. Early white. 20c. 3/50c. \$2.00/doz.

Assorted Colors, miniatures, in endless variety. Special price, 10c ea. \$1.00 doz. You can afford a lot of the mixed and a few of the named. This is a genuine bargain as these are all named varieties, accidentally mixed.

Neomarica or Walking Iris are tropical and are favorite house plants for their unusual habit of growth.

Neomarica gracilis. Smallest and earliest. Use 5" pot. 75c.

N. Northiana. Larger plant and flowers, slow propagator. Use 6" pot. \$1.75.

N. hybrids. We crossed the above species and raised plants with flowers as large as *Northiana*, as profuse as *gracilis* and plants midway in size. They are rapid multipliers. \$1.75. All 3 kinds for \$3.75.

Tigridia pavonia. (Mexican Shell Flower) Beautiful tri-petaled flowers in a mixture of scarlet, rose, yellow, and white. Exotically marked in contrasting colors. 3 for 30c. \$1.00 per doz.

LILY FAMILY — Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinum*s, *Callas*, *Cannas*, or any bulbs "Lilies," but this is an error.

Lilium. This genus includes all true lilies, altho *Gloriosas* are so close that the flowers are similar in form. **Culture.** Plant 4" to 6" deep (deeper probably in north) in mildly acid humus—leaf mould, peat. Planted among low shrubs, where tops may reach up into the sunlight, with their feet cool and their heads warm, they are ideally situated. They do well in the half shade of trees or a lath house. All can be grown in pots, but after flowering must be shifted to garden.

Lilium auratum. Gold Band Lily. This exotic flower is a native to the Orient. Considered the world's most beautiful lily. Richly fragrant. \$1.00 ea. 3/\$2.75.

L. Regale. One of the hardiest and best garden Lilies. 75c ea. 3/\$2.00.

L. speciosum Magnificum (Rubrum). White flushed and spotted with deep rose producing a bloom essentially carmine-pink. \$1.00 ea. 3/\$2.75.

All three value \$2.75 for \$2.45. Three each value \$7.50 for \$7.35.

Gloriosa. Climbing Lily. The flowers resemble true lilies but surpass most of them in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported. Small tubers flower but the larger ones will give 2 or 3 times as many. They also make larger, more showy plants.

Culture. They must have the good drainage of very sandy soil, to which it is advisable to add peat liberally. Leaf mould will do, but it is not quite as good. If soil is heavy, dig out to a depth of 1 ft. and fill with 1 part top soil, 3 parts coarse sand and the peat. Plant tubers as soon as weather is quite warm in a horizontal position, 3" or 4" deep and mix a liberal portion of peat with soil close to tubers. *Gloriosas* prefer full sun exposure but will do well in slight shade. They like heat and abundant moisture. Lack of either will slow them down. We recommend only outdoor culture.

Gloriosa rothschildiana deserves the name **Glory Lily**. Very vivid colors, red with yellow markings turning later to deep red, in a true lily form. Flowers are long lasting and are used in corsages. Plant 4 ft. tall. Prices, small blooming size tubers, \$1.00, larger sizes that produce larger plants and more flowers at \$1.50, \$2.00 and \$2.50 ea.

OXALIS FAMILY — Oxalidaceae

Culture. *Oxalis* do best in sandy soil. They do very well also in poor soil. In pots the drainage should be good and some coarse sand in soil will help. Most *Oxalis* like nearly full sun.

O. crassipes. Tuberous. Bright rose flowers. Evergreen and everblooming. Tuberous rooted species start slowly. Keep moist. 15c ea. \$1.25 doz.

O. Regnalli. Large, truncate leaves, reddish on under side. Trifoliate. Nearly or quite evergreen and everblooming. Large white flowers. Tuberous rooted. 50c ea.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or *Zantedeschia*, Fancy Leaf *Caladium*, *Sauromatum*, *Amorphophallus*, *Arum*, *Drunculus*, *Anthurium*, *Spathiphyllum*, etc. All are shade plants and need acid soil.

Zantedeschias are not true Callas, tho this is their common name. **Culture.** Colored Callas, *Zantedeschia elliotiana* and *Z. rehmanni elegans* may be potted or planted in the garden in almost frostless deep south. If the rest period, when the enzymes of bulbs and tubers are changing the stored starch into sugar, is too short, planting in cold wet soil may cause them to rot. When a bulb, corm or tuber is ready to grow, there will be root knobs on the base and top growth started.

A soil of peat and enough coarse sand to feel very gritty, as described for *Amaryllis* is good for most of the Araceae. Note exception as to *Anthuriums* and *Spathiphyllums*. Fertilize with Spoonit or manure water. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade. Keep barely moist until growth is well started, then water freely. Cool temperatures suit them best. Hardy outdoors in S. Calif.

Zantedeschia rehmanni elegans. Improved light pink form. 45c each. 3/\$1.25.

Z. elliotiana. Deep golden yellow. If not given enough sun they become tall and spindling and fail to flower. 35c ea. 3 for \$1.00.

Z. aethiopica. White Calla, may be planted as late as March 1. 50c ea.

Amorphophallus revieri. Sacred Lily of India. **Culture** like *Zantedeschia*. The tubers may be stored dry and allowed to flower before potting or planting. We have blooming size tubers for \$5.00 and \$6.00 ea. Smaller tubers for \$2.50 and \$3.50.

Sauromatum venosum. Lizard Lily. The long, serpent like spathe wriggles along on soil surface. I've seen persons jump, at their first look. Soil and culture similar to *Zantedeschia*. Large tubers, \$1.50 and \$2.00. Medium, \$1.00.

S. nubicum. Rare, collectors species. \$3.50.

Anthurium andraeanum. Until very recently these have been high in price. But now prices are reasonable. The cordate leaves make them useful as foliage plants alone but a mature plant will flower six times a year. Flowers are calla-like, but rather flat, in glossy red, pink, orange, coral, rose and rarely white. They are much used for cut flowers in arrangements and corsages. They are everblooming if given correct conditions at all times, but sometimes take a vacation when very hot, very cold or very dry.

Culture. *Anthuriums* and *Spathiphyllums* are tender tropical plants, suitable only for pot culture. **Soil formula.** They will grow in most any organic compost. We use and advise one part old osmundine (discarded from orchid pots, new will do); one part peat. Add enough Sponge Rok or coarse sand to make compost very gritty and to hasten quick drainage. See Potting Directions under General Culture. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot, or build up with sphagnum. New roots must be kept covered.

Use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 45° does little harm other than to stop growth and flowering. 70° to 80° is a good daytime temp. Air should be very humid. Spraying foliage daily increases air humidity. They should never become completely dry, thruout. Water about every two days.

Shipping. The best way is in pots, by express. But you pay the express and it costs us more to pack. Plants are set back a little by sending by mail, out of pot. But they recover and you save quite a lot on the total cost. This compensates for the recovery period. If by mail you should add 35c for plants under 8" and 45c for larger sizes for "Special Delivery," also for Insurance fee if desired. They cannot be mailed in cold weather.

Anthurium andraeanum, Shaffer Hybrids are the best. Plants should begin to flower at 10" to 12" height. We have had 6" plants flower and very often 8"-10" flower. They grow and multiply so rapidly that we are forced to make sharp cuts in our former prices. They are really bargain prices. This season we are offering no small plants because of increased express rates we advise that you order plants out of pot. On the larger plants from 18" to 30" tall the price is \$5.00 plus cost of postage. The weight of plants this size, packed will be around 3 lbs. as we have to use much packing when sent by mail. This is a guess. Ask your P.O. the cost of parcel post on a package of this weight from your office to Los Angeles, (near La Verne). Remit \$5.00 plus estimated cost of postage. If you send too much we will send larger plants. You should, of course, add insurance, special handling and in California add 4% Sales Tax. You must also promise to send more if cost of postage is more than your estimate.

The colors available are shades of orange or orange red. Do not specify the color, at this price.

If you want everblooming plants, these are the answer.

Spathiphyllum Clevelandi. Close relative and formerly classed as an Anthurium. Very free blooming. Foliage is oblong and pointed. Flowers are pure white. Very attractive. Free blooming. They are easy to grow as house plants, in 4" pots. Small plants, \$1.50. Blooming sizes, often in bloom when sent, \$2.50. Out of pot, postpaid. In pot, Express, f.o.b.

S. floribundum. Larger and better than S. Clevelandi. Stock limited, \$3.50, out of pot postpaid or potted, Express, f.o.b.

Fancy Leaf Caladiums are the most gorgeous of foliage plants. Every leaf is a flower as vivid in color as a rose. We have selected for you 10 of the most beautiful, we think, for you this year. **Culture.** The Caladium is a tropical plant and naturally grows best in very warm temperatures, 70 degrees or more. They are heavy feeders and seem to grow best in a soil with a pH of 5.5 to 6 and with sufficient organic matter to prevent its packing and sealing to the point of locking out air circulation. The pot soil should be loose and fluffy even after continuous and frequent watering during the growing period. A mixture of equal parts of coarse sand, peat or leaf mold, and dairy manure has been found satisfactory. Caladiums should be started in moist soil, or peat. After roots have started more water should be used. As the plant develops and the leaf area increases, more water is thrown off by the leaves and more water will be required, but the soil should never contain sufficient water to "water-log." Constant watering will tend to leach the plant food from pot soil so it will be desirable to feed the plants periodically. Use Spoonit for a good fertilizer.

Ann Greer. A large round leaved red. Medium leaf producer. Low growing.

Aaron. A new variety, first leaves are tall, but later leaves come to develop a very nice pot plant.

Edna. Has large glossy red leaves, bordered with green.

June Bride. The whitest of the whites. It is low growing.

Lee Stokes. Uniquely colored plus good leafing qualities make it an attractive Caladium.

Mary Queen of Scots. A low growing leafy variety that offers another variation in color. Has pink background with red veins splotched with green, red and pink.

Mrs. F. M. Joyner. A very colorful new white. Red veins and border. Vigorous and tough.

Mrs. F. Sanders. A large leaved, vigorous variety with a different coloration. Very pretty.

Mrs. W. E. Halderman. Very colorful with pink to red and green. Tall grower.

Sorocoba. Has a suffusion of delicate pink over white. A good leafer.

Prices. 50c ea. or complete set of 10 for \$4.50. These are No. 1 bulbs labelled.

Caladium Lance Leaf varieties. These are new varieties with narrow pointed leaves. Very beautiful.

Cinderella. A white lance leaf with occasional green mottles and vermilion splotches. Interlaced with minute pink dots, lots of leaves. Very beautiful.

Gloriosa. Pink center, white midriff with moss green edgings splotted with pink. Excellent.

Joyners Pride. Medium wide lance type. Bright red color, narrow green border, short stems. Very good.

Little Rascal. Low growing heavy textured leaf. Very rich wine red color. Beautiful beyond description.

Pink Charming. Medium wide pearl white with pink patches lacy green border. Very good.

Red Bird. Medium wide upright lance. Light rosy red in color, pink tinted stems.

Prices. 60c each. 6 for \$3.20. **Special price** for all Caladiums listed, 16 for \$7.60.

THE GESNERIA FAMILY — Gesneriaceae

The Gesneriads listed here are tropical or semi-tropical. They are strictly house plants outside of the tropics. Most of them are for the warm house. All are either tuberous rooted and deciduous or fibrous rooted and evergreen.

The American Gesneria Society, % Mrs. John F. Darsow, Secy., 3749 Linders Dr., Palo Alto, Calif., publishes much useful information on this family. For cost of membership and other useful information please address the Secretary. The Gloxinian, Gray, Oklahoma, supplies much useful information.

Gloxinias are favorite florists, greenhouse and house plants. Potted plants usually sell for about \$2.00 or \$3.00. It costs much less to buy the bulbs and grow your own. It's more fun too.

Culture. The soil may be one part by volume of sharp, coarse sand and 2 parts peat or peat and leaf mould. Add 1 tablespoon bone meal for a 6" pot. Mix thoroly. Set tuber a little under soil surface concave side up and mulch with $\frac{1}{2}$ " wet sphagnum. Last of all water until a little runs thru at bottom. These are tropical plants. The best starting temperature is at least 80°. They will start, but a little more slowly at 70°, with 60° or over at night. Keep soil moist and they can be in full sun until foliage appears, then slightly shaded. The plants need good light and more sun than most Gesneriaceae. Leggy plants result from insufficient light. Fertilize with Spoonit or liquid manure about every 3 or 4 weeks. Sun must not touch wet foliage.

Gloxinias. The old time ten. Improved. California grown, $1\frac{1}{2}$ " to 2" tubers, in the following sorts: **Blanche de Meru**, rose, white throat; **Emperor Frederick**, scarlet, white border; **Emperor William**, violet, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Prince Albert**, frilled, dark violet; **Princess Elizabeth**, blue, white throat; **Roi des Rouges**, frilled, dark crimson; **Tigrina**, from light rose to dark lavender. Characteristics are the small tiger spots; **Violaceae**, soft violet. Price 40c ea. 6 for \$2.00, if all one kind or assorted and in one bag. Complete collection, labelled, \$3.75.

The Newer Gloxinias. **Defiance**, red Scarlet, 50c. **Queen Wilhelmina**, carmine, 50c. **Waterloo**, deep red, 50c. **Hollywood**, novelty, blue blending to scarlet purple, 55c. **Pink Edge**, 50c. **Star Dust**, huge burgundy, 55c. **Velvet Queen**, huge ruffled, velvet red, 55c. **Crimson Rose**, 50c. One each of the 8 var., \$4.00. We have a few mixed varieties and sizes for 35c ea.

Gloxinia Seed. We offer seed packets of the following var. at 50c per packet and a self addressed envelope. The number of seed in a packet range from ten upward, depending on the variety and scarcity. Seed are very small but every one grows. Varieties, **Beacon**, rich dark red, flexible leaves; **Blue Heaven**; **Crimson Glow**, glowing scarlet, free blooming; **Marveille**, brilliant red, edged white, free flowering, flexible leaves; **Panzer's Scarlet**, brilliant, lg. flowers; **Rose Pink**; **Tigrina**; **Rose Sensation**, new color, carmine rose; **Star Dust**; **Swiss Emblem**, brilliant scarlet red, white margin; **Velvet Queen**; and **Mixed seed**. Don't forget the stamped self addressed envelope, required for all seed orders. Also Californians pay 2c sales tax on a packet.

Culture. Place fine grained vermiculite or terralite in the bottom of a plastic refrigerator dish and moisten well. Plant seed very thinly over surface. Keep covered with lid until plants are ready to pick out. One must make sure that moisture does not escape and add water if it does. They may be picked out and transplanted into 2" pots after second pair of leaves develop. We grow many rare seeds by this method, including African Violets. Gloxinias flower at about 5 months.

Episcias resemble African Violets in form and other ways, yet are entirely distinct. African violets flower profusely. Episcias are very showy foliage plants but have brilliant, usually red, flowers, not so freely produced. They are natives of the American tropics, not African. Their flowers are solitary or clustered, not in cymes as in African Violets. The resemblance is casual, not botanical. But their red flowers and general contour of the plants have resulted in promotion of *E. fulgida* (often sold as *E. coccinea*) as a Red Violet. They are very tender tropicals and should not be colder than 60°. At about 50° they are badly damaged or killed, hence cannot be shipped when likely to encounter temperatures under 50°. They make stolens or runners like a strawberry and new plants are made in a similar manner. We plant in baskets of sphagnum and hairpin the little plants on stolens to sides and bottom of basket. Or stolens may be allowed to hang as jewelled pendants. Flowers are usually bright scarlet and foliage usually villous, or hairy and velvetlike. They may also be grown in pots, same soil as African Violets. Either way they require constant moisture. When you receive the plants do not remove or tear apart the mass of sphagnum which contains their delicate roots. Plant the entire mass.

Episcia cupreata. Type variety. Red flowers. Very dark bronze leaves with a slight silvery tone along midrib. \$1.00.

The following are cultivars or sports of *E. cupreata*. All have the same red flowers.

E. Acajou. Dark bronze with wide silvery green midrib. \$1.00.

E. Chocolate Soldier. Dark chocolate with narrow silver midrib. \$1.00.

E. Emerald Queen. Dark green with silvery green midrib. \$1.00.

E. Frosty. Prevailing color is the frosty green, spreading to leaf margins from the center and toward the margins are markings of dark green. \$1.00.

E. Harlequin. Very shiny leaves, wide green zone along midrib with very dark greenish bronze between pinnae from the midrib. \$1.00.

E. metallica ("Kitty"). Leaves densely covered by short hairs, or villous. Very dark bronze with silvery pink center stripe in midrib. Reverse side, vinaceous purple. \$1.00.

E. Silver Sheen. Silvery green leaves, narrowly bordered dark green. \$1.00.

E. Sylvan Beauty. Green central zone with greenish bronze on outer portion. \$1.00.

E. Splendens. (Variegata). Silver green markings on emerald green background. This is the last of cupreata cultivars. \$1.00.

E. cupreata, var. viridifolia. Nile green leaves. The best bloomer of all. \$1.00.

E. fulgida. (Coccinea, Red Flame Violet). Medium bronze with silvery green veins. Lovely red flowers—but not a "violet." \$1.00.

E. lilacina, type variety (Fanny Haage). Large lilac flowers. Broad green center on greenish bronze background. \$1.00 each.

Special. We can now offer the rare **Episcia dianthiflora**. This is a vigorous grower with small green leaves and white flowers with fringed petals in spring and summer. \$1.75. 13 var.; our selection for \$10.00.

Columnneas. Are epiphytic climbing vines, having large, vivid red flowers. They may be grown in pots, soil similar to that of other Gesneriads but we prefer to grow in wire baskets of pure sphagnum or with the center of sand and peat, equal parts.

Columnnea gloriosa. The most profuse bloomer. **C. Schiedeana**, very large, thick stems. **C. microphylla**. **C. Banksii**. **C. Allenii**. Plants that should flower in their next season, \$2.00.

Reichsteineria is now the valid name for plants formerly known as *Gesneria* and later as *Corytholoma*, the species is still probably *cardinalis*. The large brilliant red

flowers are attractive. Grow the seed as for Gloxinia. Seed packet 50c and stamped, addressed envelope.

Reichsteineria cardinalis. Delightfully green slightly hairy, heart-shaped leaves, and long, curved flowers, borne in profusion, in the brightest of scarlets. Blooms resemble a Parrot's beak. May last longer than those of other gesneriads. Grow like Gloxinias with lots of light. 50c ea.

Aeschynanthus (Trichosporum). This is a nice trailing, almost woody vine. In nature, they are epiphytal and climb trees. The plants are attractive and the freely produced large flowers are tubular and vividly colored.

They are tender tropicals and shipment will be made only when weather permits. We grow them in wire baskets, lined thickly with sphagnum and with peat and sand in center. They do well in pots. They require constant moisture. Leaves and flowers drop when dry.

Aeschynanthus lobbiana has scarlet fls. in a purple calyx. \$1.25 postpaid.

Smithiantha (Naegelia) are fine, tuberous rooted, foliage plants. The rounded cordate leaves are covered by soft hairs that give a velvety appearance and cause them to change colors when viewed at a different angle. The showy flowers are long, tubular and in pink and orange shades. Minimum temperature 60° for best growth. We grow in pots in soil as advised for Gloxinias. They should not be too deeply shaded nor ever become dry. We offer dormant tubers delivered about early summer usually. The dormant period is somewhat variable. They must be planted at once when received.

Smithiantha zebrina. The leaves are mottled and veined red brown. \$1.00.

S. cinnabarina. Gorgeous dark red velvety leaves, cinnabar red flowers. \$1.00 ea.

S. hybrida, Orange Delight. Foliage mottled red-brown. Flowers orange outside, yellow, spotted orange inside (as most of them are). \$1.00.

Achimenes have been popular plants for a very long time. They are not too hard for the average amateur. The plants and the flowers are diverse in size and form and one should plant a number of varieties.

Culture: From 1 to 5 tubers may be grown in a 5" pot. We grow them entirely in wire baskets and this seems to us to be the perfect way. We use 16" baskets but for amateurs we recommend 10" baskets rather than larger or smaller. For only 2 or 3 it is all right to use pots or 8" baskets. Some commercial growers use gallon tin cans.

The compost in posts may be the same as for Gloxinias and other Gesneriads. In baskets we line them first with sphagnum and fill center with fibrous peat. It would probably be better to use equal parts of peat and coarse leaf mould. Some sand can be added.

The name is said to mean that they do not like the cold. This may be fanciful but is nevertheless true. They like warm days and nights. A good temperature will not be under 60° at night and up to 80° daytimes, and higher does not hurt them. Protect them from winds or even strong drafts. It dries them out too much and the compost should never become dry. They need about the same sun exposure as Gloxinias.

There is much controversy about names. We do not guarantee our list to be true to name for any certain nomenclature. We have a large stock and are reducing prices but it is best to name a few substitutes. If you store bulbs be sure to cover with vermiculite. Sand is second best. You may order by name or number.

Achimenes. 10 labelled or 20 assorted for \$1.00. If you want a complete list of 35 or more Achimenes send us a dime for the list. Deduct 10c from your first order.

AFRICAN VIOLETS — Saintpaulias

Few would question the statement that African Violets are the most popular house plant at the present time. They fit perfectly into the modern smaller homes and rooms, where things are fixed or built in. Every convenience in a small space. They may be grown in an east, south, west or north window or even the basement if given artificial lighting and correct temperature. See under Garden Reference Books the new book, Growing Plants Under Artificial Lights.

They win favor because of their daintiness and beauty, their everblooming habit, their diversity in foliage, flower color and form. The introduction in 1955 of double pink varieties, for the first time have enhanced their popularity. There seems to be no limit to their possibilities in the hands of breeders, except that their color range can never include yellow or true spectrum red. The reds are always purple toned.

Culture. The question most often asked is, "How can I get constant bloom? My plants are healthy and grow luxuriantly. The foliage is deep rich green, beautiful plants but no flowers." The answer is, you do not give them enough light. Note the discussion under **Sun exposure**.

The advised **range of temperatures** for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase, in our living rooms.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two. Or it may result from too low relative humidity. This should be 40 to 60%.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Nor do we ship on very hot days in summer. We can ship leaves by air in winter but you must send extra for air mail.

Watering. Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. The interval between waterings should be long enough to permit the top soil to become slightly dry. Do not use pots that have no hole at bottom for drainage. Use sub-irrigation infrequently. We prefer regular pot watering.

Good ventilation is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Plants have a considerable tolerance and do well in a wide variety of soils. Soil should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good. We use about one half compost, one half peat with enough Sponge Rok to give good drainage.

If you are unable to supply your own soil mixture, the best we know about is Black Magic African Violet mix. Listed under "Supplies" in this catalog.

Fertilizers. We use only Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

Sun exposure. Most of the advice one receives over-emphasizes shade. Lack of sufficient light intensity is one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely plants in a south window, anywhere in the north temperate zone, in winter, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The color of the foliage will tell you what they can endure.

When healthy plants have light, yellowish foliage they probably receive too much sun. For checking, select a plant having green foliage, under normal conditions, not a dark foliage plant like Holly or Pink Delight nor one like Frosty having ivory or white areas.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in *How To Grow African Violets* (which you should have,—see our book list,) says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Any kind of light will do provided the plants receive 15 to 30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the Northern states where winter days are short and dull. For the most complete information on this, send us \$3.50 for Peggy Schulz' book, "Growing Plants Under Artificial Light."

Humidity. The humidity of our homes is likely to be not much over 25%. One can increase the humidity around the plant sufficiently by setting the plants in saucers. These may be partly filled with small gravel. Set pots on top of gravel and pour in water until it does not quite touch pots. A saturated sponge in a shallow dish will help humidify air. If you have a greenhouse, keep the walks wet.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. Isotox M, used as a spray, is effective. Use 1 tsp. to one gallon of water. Badly infested plants should be discarded or at least removed from the vicinity of all other house plants. All effective insecticides are poisonous. You must not breathe the fumes. You must avoid skin contact. See our listing.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mites spread to all the plants and effective measures must be at once applied. We have found the most effective remedy is to spray with Isotox Spray, which is listed under "Supplies." Immediately remove infected plants into quarantine. Do not handle infected plants, then healthy plants.

Customers are invited to visit our nursery when in Los Angeles area. Take San Bernardino Freeway to turn off for L.A. County Fair (Ganesha Ave.) go to entrance of L.A. Fair Grounds, turn left on McKinley then right on D St. to Third Street, left to 1412 Third St.

Orders from distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in perfect condition. They did not quit blooming. We charge the customer the excess of Air Parcel Post above the cost of Parcel Post to our 8th Postal Zone. Please state in your order that you will pay the difference promptly if your estimate is too low. But send your estimated amount with order.

Starting leaf cuttings. A good many growers start cuttings in water. We believe a better way is to start in terralite, (a fine grained form of vermiculite), keep moist and in good light but no sun. Long distance shipments should go by air, the same as for plants. If leaf is wilted, soak 2 hours in water or until leaves are fresh looking.

Sales Tax. Californians must include 4% Sales Tax. Out of state customers sending plants as presents to California friend must also pay it. Please read "Terms and Instructions for Ordering," and comply on all points. Please add 50c for postage on small orders.

Arctic Nite. Beautiful vivid dark blue double. \$1.25.

Alaskan Waters. Double blue with supreme foliage. \$1.25.

Annabelle. Med. blue double flowers. Foliage beautiful red back. \$1.50. Sm. \$1.00.

April. Fringed single blue, dark ruffled leaves. \$1.00.

Aztec. Light orchid double. Very free flowering. \$1.50. Sm. \$1.00.

- Bernice.** Double light blue flowers. Soft medium green leaves. \$1.25. Sm. \$1.00.
- Blue Electra.** Immense light blue dbl., standard foliage. \$1.25 sm.
- Blue Mantle.** Clear medium blue bouquets of nicely formed flowers. \$1.50. Sm. \$1.00.
- Blue Peak.** Double blue flowers edged white. Geneva type. \$1.25. Sm. \$1.00.
- Bud's Pink Cupid.** Very large double pink on fine girl foliage. \$1.25.
- Bud's Pink Waltz.** Dark quilted lvs. Deep pink double. \$1.50. Sm. \$1.00.
- Cara Mia.** Outstanding double blue and white flowers on improved dark green foliage. \$1.50. Sm. \$1.00.
- Carmen.** Claret red flowers. \$1.00.
- Cathy Reed.** Fringed deep pink, bronze standard foliage. Small \$1.00.
- Clarissa Harris.** Olive green, red back fringed lvs. Heavily fringed deep pink. \$1.50. Sm. \$1.00.
- Cup of Claret.** Girl foliage with large single claret red fl. \$1.50. Sm. \$1.00.
- Cydonia.** Semi-double dark purple fls. Dark wavy leaves. \$1.50. Sm. \$1.00.
- Dark Eyed Dream.** Lovely soft blue flowers with darker eye. Waxy lvs. Sm. \$1.25.
- Dixie Moonbeam.** Lavender and white blend fls. Standard foliage. \$1.50.
- Double Fantasy Ann.** Girl leaves. Fantasy flowers. \$1.00.
- Dbl. Midnight.** Very large red double. \$1.50. Sm. \$1.00.
- Dbl. Peach Blossom.** Dark quilted leaves. Peach-blossom double. \$1.50. Sm. \$1.00.
- Dbl. Red Comet.** Wine red. Dark quilted leaves. \$1.25.
- Dbl. Uncle Bob.** A very good pink double. Small \$1.00.
- Drops o' Wine.** Deep wine, almost black. \$1.25.
- Easter Dream.** Frilled mauve single with white edge. Dark lvs. \$1.50.
- Evelyn Johnson.** Lovely large double pink on waxen girl foliage. \$1.25.
- Fantasia.** Lavender flowers with dots and dashes of dark violet. \$1.50.
- Finlandia.** Midnight purple, fringed fls. Glossy dark bronzy lvs. ruffled. \$1.00.
- Geneva Nueva.** One of the best Geneva type fl. Purple with white edge. \$1.50. Sm. \$1.00.
- June Bride.** Light green girl foliage with lovely frilled white flowers. \$1.50. \$1.00.
- Lady Jewel.** First time in catalog. Only shipped in flower. White with lavender on about one-fourth of each side of petals. \$1.50.
- Lorna Doone.** Deep wine bicolor fringed fl. Dark wavy leaves. Sm. \$1.25.
- Mary Thompson.** Frilled lavender double; wavy foliage. \$1.25, sm.
- Minnetonka.** Dbl. blue and white. \$1.50. Sm. \$1.00.
- Miss New York.** Light lavender double flowers on standard foliage. \$1.50. Sm. \$1.00.
- Mr. Chicago.** Semidouble blue with touch of white on edges of fls. Sm. \$1.25.
- Multiflora.** Lavender; Pink; White; Ice Blue or Mauve. \$1.00 each.
- Nonnie.** Lovely large red wine flowers on girl foliage. \$1.25.
- Ocean Waves.** Velvet purple flowers with unusual waved petal edge. \$1.00.
- Painted Girl.** Snowy white, bordered by orchid. Girl foliage. \$1.25.
- Perky Pink.** Lovely double pink. Sm. \$1.00.
- Pink Caress.** Pink fringed flowers on dark bronzy foliage. \$1.25. Sm. \$1.00.
- Pink Cushion.** Double pink. \$1.50. Sm. \$1.00.
- Pink Miracle.** New and different, large pink fls. with deep pink slightly ruffled edge, with blotch of deep rose pink in center. Small \$1.25.
- Pink Petticoats.** Fringed deep pink. Dark bronzy leaves red backs. Sm. \$1.00.
- Pink Puff.** Lovely double pink, very large flowers. Quilted leaves. \$1.50. Sm. \$1.00.
- Pink Victoria.** Very good double pink. \$1.50. Sm. \$1.00.
- Pink Waverly.** Dark pink fringed flowers. Wavy foliage. \$1.50. Sm. \$1.00.
- Red Mahogany.** A very good flowering variety. \$1.25. Sm. \$1.00.

- Rose Wing.** Large white ruffled lvs. shaded with rose orchid. Supreme lvs. \$1.50.
Sea Sprite. Double white with lilac fringe fls. Quilted leaves. \$1.50. Sm. \$1.00.
Show Day. Extra large white with blue overlay, darker center. \$1.50. Sm. \$1.00.
Show Cloud. Double white with blue center. Supreme leaves. \$1.25.
Show Stopper. Supreme girl leaves. Single white with red edge. \$1.50. Sm. \$1.00.
Silver Moon. A very good flowering white, smooth medium green leaves. \$1.25.
Snow Ball. Very nice free flowering double white with quilted leaves. \$1.50. Sm. \$1.00.
Snowy Princess. Variegated foliage, giant red bi-color flowers. \$1.25.
Spanish Lace. Deep blue ruffled edge fls. \$1.50. Sm. \$1.00.
Spring Time. Blush pink. \$1.25.
Star Blue or Star Pink. Star shaped flowers. Small \$1.00 each.
T-V Chaperone. Frilled double red on dark slightly wavy foliage. \$1.25.
T-V Flirty Eyes. Single rosy-lavender, frilled; square white patch above eye. Sm. \$1.00.
T-V Jealousy. Reddish-purple, fringed double flowers. \$1.50. Sm. \$1.00.
T-V Patio Dance or Stagline. Both double blue, dark green wavy leaves. \$1.50 ea.
T-V Play Boy. Very good large single pink, not frilled. \$1.50. Sm. \$1.00.
T-V Scandal. Blue with white edge frilled flowers. Lvs. rippled. \$1.50. Sm. \$1.00.
T-V Swirling Petticoats. Deep purple single. Lvs. very pretty. \$1.50. Sm. \$1.00.
T-V Tea Time. Single frilled mulberry shade; beautiful foliage. Sm. \$1.00.
T-V Vallen Pink. Deepest pure pink single, frilled edging. Lovely. \$1.50. Sm. \$1.00.
White Goddess. Lovely pure white with heavy frill, on dark green girl foliage. Sm. \$1.00.
White Orchid. Heavily ruffled large white fls. on wavy light green foliage. \$1.50. Sm. \$1.00.
White Pride. Heavy flowering double white. \$1.50. Sm. \$1.00.
White Pride Supreme. Largest double white fls. Supreme foliage. \$2.00. Sm. \$1.00.
White Puff. Ruffled double white flowers. Dark green wavy leaves. Sm. \$1.00.
Beginners collection. Our selection. 2 for \$1.75. 3 for \$2.50. 4/\$3.25. 5/\$4.00.
 Dealers write or call for prices. Visitors are always welcome.
Miniatures. Our selection \$1.00 ea. Leaves 50c ea. \$5/doz. Ashes of Roses, Blazing Girl, Bashful, Blue Buttercup, Bonfire, Bronze Elf, Cascade, Easter Bunny, Elf Toes, Dusty Queen, First Love, Flamingo Girl, Florencita, Gay Seniorita, Gremlin, Grumpy, Jessie Cutup, Lini, Morning Glory, Moonlite, Minneapolis, Mulberry Curls, Pink Queen, Pixie, Princess Pat, Show Glow, Shine Boy, Sunshine Baby, Temple Orchid Rose, Tinker Bell, Thumbelina, Ting O'Ling, Tiny Bells, White Elf, Violette Elf.
 Leaves. 50c ea. \$5.00 doz. b - blue; p - pink; w - white; dbl - double.
- | | | |
|-----------------------------|-------------------------|-----------------------|
| Annabelle, b | Cara Mia, dbl | Double Uncle Bob, p |
| Autumn Frost | Cathy Reed, p | Double Raspberry |
| Aztec, dbl | Challenge | Double Red Comet |
| Black Cherry, dbl | Clarissa Harris, dbl p | Dresden Dream, p |
| Blue Cushion Supreme, dbl | Cydonia | Drops of Wine |
| Blue Electra | Dark Eyed Dream | Easter Dream |
| Blue Frills | Desert Rose | Elizabeth the Queen |
| Blue Halo | Dixie Fairy | Evelyn Johnson, dbl p |
| Blue Mantle, dbl | Dixie Moonbeam | Falstaff |
| Bon Bon | Double One, dbl b | Fernleaf |
| Bud's Cherry Pink, dbl | Double Peach Blossom, p | Fire Dance |
| Bud's Pink Cupid, dbl | Double Pink Camellia | Flamingo, dbl p |
| Bud's Pink Mermaid | Double Pink Holiday | Frilly Fluff |
| Bud's Pink Powder Puff, dbl | Double Pink Hoosier | Grace Pope |
| Cameo | Double Midnight, red | Grand Champion, dbl p |

Hermosa, dbl p
 June Bride, w
 Lady Orchid
 Limeade
 Lorna Doone
 Longiflora, dbl b
 Longiflora, dbl purple
 Longiflora, dbl red
 Love Song
 Mamselle, dbl p
 Mary Thompson, dbl
 Meg
 Miss Cathy
 Miss Monroe, dbl red
 Miss New York, dbl
 Mr. Chicago
 Northern Lights
 Ocean Waves
 Pacific Moon
 Pacific Prince
 Perky Pink, dbl

Pink Caress
 Pink Cloud, dbl
 Pink Champagne
 Pink Fog
 Pink Miracle
 Pink Puff, dbl
 Pink Victory
 Pink Waverly
 Red Dogwood
 Regency
 Rose Wing
 Rubicon
 Ruffled Lace
 Sea Sprite
 Show Day
 Show Stopper
 Sky Blue Pink
 Snow Ball, dbl w
 Snowy Princess
 Spanish Lace
 Spider

Springtime
 Star Blue
 Star Pink
 Stephanie, p
 Student Prince
 Sunbonnet Sue
 Swank
 Sweet Sixteen
 Thunderhead
 T-V Cut Velvet
 T-V Flirty Eyes
 T-V Playboy
 T-V Scandal
 T-V Swirling Petticoats
 T-V Vallen Pink
 T-V Whispers
 White Goddess
 White Orchid
 White Pride Supreme
 White Puff
 Wind Song

African Violet leaves 35c ea. 3 for \$1.00. \$3.00/doz. Any over 25c ea.

Air Waves, dbl w
 Alaska, w
 Alaskan Waters, dbl b
 April
 Angels Blush
 Attraction
 Autumn, dbl
 Ballerina Bolero
 Bavaria
 Bernice, dbl b
 Black Fringe
 Blue Cluster, dbl
 Blue Peak
 Blue Pink, dbl
 Blue Ridge
 Blue Tiara
 Carmen
 Caracol
 Celery
 Checkerberry, p
 Clementine, w
 Crusader, dbl
 Daisy Mae
 Delight, dbl b
 Detroit Girl, b
 Double Fantasy
 Double Garnet
 Double Inspiration
 Double Polar Ice
 Double Sea Shell
 Dream Girl, b
 Dupont Lav. Pink
 Dupont Lav. Girl

Edith Cavelle
 Fairy Queen
 Fantasy Double Ann
 Fantasy Edge
 Finlandia
 Floradora
 Frivolleta
 Gaucho
 Georgia Peach
 Geneva Beauty
 Giant Purple Monarch
 Glamour Boy
 Hia Loa Light Blue
 Indian Girl
 Indianola
 Lacy Lavender, dbl
 Lavinda, dbl
 Mayfair
 Minnetonka, dbl
 Miss Ruffles
 Moonlite
 Multiflora Blue, dbl
 Multiflora Ice Blue, dbl
 Multiflora Lavender, dbl
 Multiflora Mauve, dbl
 Multiflora Pink, dbl
 Multiflora White, dbl
 Navy Bouquet, dbl b
 Nightingale
 Nonnie, dbl red
 Ohio Bountiful, dbl p
 Orchid Geneva
 Orchid Velvet

Pacific Shadows, b
 Pandora
 Pink Cushion
 Pink Delight
 Pink Ideal, dbl
 Pink Melody
 Pink Petticoats, dbl
 Pink Sequin
 Pink Spice
 Prima Donna, dbl
 Popcorn, dbl w
 Queen's Cushion, dbl
 Red King
 Red Mahogany
 Rose Glow
 Roseonna Blue
 Ruffled Geneva
 Ruffled Queen
 Sailor's Delight
 Silhouette
 Show Queen
 Show Star
 Sugar Babe
 Temple Satin
 Texas Fringe
 The Bride
 Tinker Belle
 T-V Patio Dance
 T-V Rose Prom
 T-V Summer Dream
 Velvet Queen
 Waysata
 White Pride

BEGONIA FAMILY—Begoniaceae

How to Grow Tuberous Begonias. No plant or flower is more beautiful than that of a well grown Tuberous Begonia. They may be grown in pots or in the garden in most states. They are semi-tropical but do not do well in the tropics. Florida customers have reported failure.

In Calif., south of San Francisco, they do best near the coast but we grow fine plants and flowers in this hot, dry inland valley by cooling them off by daily sprinkling plants. Our flowers tho are smaller than those grown in cooler areas. Water hurts neither foliage nor flowers. The best place is in a lath house, north of a building or under trees here.

Worth Brown, in his book on Tuberous Begonias (which you should have; see our listing under "Books") recommends them also for pot culture in the house or green-houses. The tubers we sell should have 7" pots.

A loose sandy soil containing much well rotted leaf mould is best. For pots, one may use $\frac{2}{3}$ leaf mould and $\frac{1}{3}$ rich, very sandy loam. If not very sandy add enough sand to the mixture to make it quite gritty. Most commercial growers add a very small portion of dry, powdered steer or sheep manure or well rotted stable manure. It should not be close to the tuber. Do not venture to be liberal. It is probably safer to use liquid fertilizer like Spoonit when plants are well advanced in growth. It is safe to add a tablespoonful of bone meal to each pot.

Do not pot or plant tubers until a sprout appears. A famous grower advises they be spread out in a warm, dark room, the eye up, for sprouting and that moist sphagnum is unnecessary. For potting directions see general culture. Pot or plant sprouted tuber, covering entire tuber. Begonias are shade plants but to bloom well they should have all the sun they can stand without burning.

Begonias like moisture but do not overwater starting tubers or small plants. It is a good plan to dust tubers with sulphur to prevent mildew. If it starts, use sulphur.

If you want fine large flowers, pinch off all but one sprout on tuber—except on the Lloydii. Dropping of buds may be caused by mildew, overwatering, lack of fresh air circulation, too dense shade or too hot.

We list 1¼"-1½" tubers, a medium size. The size of tubers does not govern size of flowers. Even small tubers produce full sized flowers, but smaller plants. Culture does affect size of flowers and plants. For the best reference book on Tuberous Begonias get Worth Brown's book listed in this catalog.

Prices. Please note that the dozen rate applies only when 6 or more tubers of one kind or assorted are packed in one bag. If separately labelled, 12 tubers take the single rate as is our rate on all bulbs.

Giant Double Camellia Flowered. Ten colors: white, pink, rose, blush, yellow, apricot, salmon, orange, scarlet, red. Price 30c ea., six, one color only or assorted in one bag. \$1.50. The ten var., in one bag for \$2.60.

Giant Double Carnation Flowered. Same as Camellia type except petals are fringed. Six colors: White, pink, yellow, salmon, orange, red. 30c ea. 6 of one kind or assorted, \$1.50. All 6 colors in one bag for \$1.60.

Giant Double Picotee. White with pink edge, white with red edge, salmon with scarlet edge. Rose and salmon 30c ea., all five for \$1.30. Six, one kind or assorted for \$1.50.

Giant Single Crispa or Frilled. Very large, profusely frilled and ruffled, single flowers. Mixed colors. 30c ea. 6 for \$1.50.

Double Hanging Basket, or Lloydii. Just right for baskets but look nice in pots or in a rock garden. The long pendent stems are loaded with small Camellia and Rose type flowers. 8 colors: white, rose, red, orange, yellow, salmon pink, apricot, scarlet. 30c ea. 6 of one color or assorted \$1.50. All 8 colors in one bag, \$2.00.

Giant Single Marginata. A two-toned Crispa type in 2 colors, white, edged pink and salmon, edged scarlet. 30c ea. Six, one color or assorted, \$1.50.

Begonia Special. Five tubers, our selection, assorted varieties, \$1.00. (Not labelled.)

Begonia Evansiana. Hardy Tuberous Begonia. No northern customers have reported

its loss by freezing. If mulched we will guarantee hardy. Large tubers can be planted 4" deep, smaller in proportion. The 2 ft. plants have typical begonia foliage and a multitude of pink flowers. Recommended for shade garden, but stands quite a bit of sun if watered liberally. Order as early as possible, as often long sprouts have developed by Apr. 1. Sizes as available, 50c ea. 6 for \$2.50.

All of the above 33 varieties of Tuberous Begonias, each type in a separate bag, listing separately for \$9.50. Price \$8.50.

The following named varieties are the finest of all Tuberous Begonias.

Autumn Glow. Extremely large cristata. The crests are deep copper contrasting with the apricot of the rest of the flowers. Up to 10" wide.

Red Triumph. A ruffled camellia type of ruby red with a velvety texture. Very large flowers.

Sunset. Profusely frilled crispa type, light copper with scarlet edge.

These are not graded to size but are usually close to 2" and will make large plants. Price \$1.00 ea. All three \$2.80.

Complete collection of all Tuberous Begonias listed, 37 varieties, \$11.00.

THE ORCHID FAMILY — Orchidaceae

The ideal place for an amateur to grow orchids is in a hobby greenhouse, but in parts of Fla. or similar climates and So. Calif. one can grow *Cymbidiums* in a lath house in half shade. Temperatures should not go much, if any, below 28°. In case of a bad cold spell cover the plants with leaves, newspapers or cartons. By this method, we once saved our *Cymbidiums* when we had a temperature down to 20°. They grow well in a mixture of loam, peat, leaf mould and coarse sand, equal parts.

The hardier types of *Cypripediums*, such as *Cyp. insigne* are injured very little if any by temperatures near freezing but for growth and flowers keep them above 40°. Those with mottled foliage such as *Cyp. callosum*, (more properly *Paphiopedilum callosum*) are tropical and grow at about the same temperature range as *Cattleyas*. In their habitat in tropical Asia they probably grow in soil but the best potting medium is osmunda and sphagnum, equal parts. They should never be allowed to become dry. They should be shaded slightly more than *cattleyas*.

The amateur needs references in order to learn the proper conditions and culture methods. We have entirely sold out the pamphlet, "How To Grow Orchids." We still have a supply of our 1949 Price List which gives brief but usually sufficient directions for many species including *Cattleyas*. The listings and prices in this 6 page pamphlet are cancelled. Order plants only from this catalog. New price is 25c. None are given free with orders.

Culture of *Cattleyas*. By far the most desirable of orchids. Many amateurs are having success in growing and flowering this most beautiful flower. When ordering, if not before be sure to order the "1949 Orchid Price List." Briefly you must have a greenhouse, a room or a glassed in porch where the plants will have good, strong light but no direct sun, unless a little in very early A.M. or late P.M. Greenhouse glass must be shaded by a coat of white wash or shading compound. In the home, shading may be had by using muslin curtains. If the foliage becomes very light green or yellowish the light is too strong; if a deep rich green, the shade is too much. 65° to 80° is close to the best temperature range. Note the temperature, light exposure and humidity favorable to African Violets. The same is about right for *Cattleyas*. You can grow them side by side. But watering is different.

We spray the foliage of *Cattleyas* at least once a day in summer and if hot often twice. This cools them. Do this about noon, earlier if temperature becomes too high. Do not spray in late P.M. as foliage should become dry before night. When cool weather arrives we spray less often, much less often in winter. Once or twice a week may be enough or even too much if you do not properly heat for their comfort. A little water held around the base of a bud spathe may cause it to blacken and rot off. Much water on

the roots or surfaces of osmunda will rot the roots. Over watering Cattleyas is the most common error. We do not usually pot water oftener than once a week and often spraying is enough if some falls on the osmunda. You must study your plants and note their reactions. Success will reward you.

Customers who have bought Cattleyas from us may consult us about their plants if trouble occurs. All of our plants have been recently repotted by a professional and in best grade osmunda. We do not like the fir bark material.

Cattleyas. We offer blooming size plants in good osmunda fiber for \$5.00. These are in 4" or 5" pots. They are fine species like *C. trianae*, and a few strays.

White Cattleyas are not common. The following are mostly June flowering, for brides but do not pin us down on this as cultural conditions may result in a wide variation in flowering date. **C. Edithiae**, purest white \$8.50. Our selection of other whites, \$6.50.

Potted Cattleyas can only be shipped by Express f.o.b.

Bletilla hyacintha. Lovely hardy, terrestrial orchid. Plant before Mar. 1. The best soil contains much sand and peat. 8 to 12 lovely little purple orchids on a scape 15" tall. Price 40c. 3 for \$1.00. \$3.50/doz. postpaid. \$25.00/100 by express, f.o.b.

Osmundine, best Florida grade, \$2.00 lb. postpaid.

For scale on orchids, spray with Thrip O cide. See listing under Garden Supplies.

Laelias look very much like small Cattleyas. We grow them in 8" to 10" baskets of sphagnum. We can supply a few varieties for \$7.50 ea. f.o.b. express. **Laelia anceps** are \$7.50 up to \$12.50. Plants with flower spikes that will soon bloom can be sent in Feb. and March for \$15.00, f.o.b. express.

Brassovola Digbyana. Plant resembles a Laelia. The white flowers have a fringed lip and are used to cross with Cattleyas in order to get fringed lips. We grow in baskets of Sphagnum but others grow in osmundine in pots like Cattleyas. This species is hard to get. Price \$10.00, in 8" wire basket, f.o.b. express.

MISCELLANEOUS

Tecolote Ranunculus and **Anemones**, large size for growing in pots or in the garden. Price, either Ranunculus or Anemones, 2 for 15c. 50c doz.

Culture. Hardy only in deep south. It is best to start after summer heat has gone— in mild autumn weather. Don't forget to keep them moist. Transplant to garden in deep south or to pots in north. You can start them or grow them in a cool room in the house in winter. They should have sandy soil with peat added. Heat is their enemy.

Fittonia argyryneura. Lovely creeping plant with shining green leaves veined white. 50c.

F. verschaffeltii. Larger, darker green leaves, veined carmine. 90c.

F. verschaffeltii, var. Pearcei, has broader and more colorful veins. Our botanical reference is not very clear but this is different and more colorful. \$1.50.

Codlaeum. Popular name is **Croton**. Shrubs from the Old World tropics. The foliage is very variable and is the most colorful plant that we grow with green, red, white in many combinations. It is easy to grow in pots and no foliage plant collector should do without several. We can supply at least five differently colored Codlaeums for 75c to \$1.00 each, according to size and color quality.

Pilea involucra. Artillery Plant, because it discharges its pollen explosively. Curious and very pretty. 75c.

Nautocalyx bullatus. Close relative of *Episcias* and as tender. Upright grower to 1 ft. or more. Quilted leaves of dark bronze-green, maroon on underside. Same soil as for above. A very gorgeous plant. \$1.25.

Ceropegia. The following are vines having long trailing or twining stems. They may be grown in soil composed of loam, sand and leaf mould or peat, in pots or hanging baskets. Plant at once and keep only slightly moist until started. The flowers are very unusual. Prices are for small tubers or cuttings.

Ceropegia Woodi. Hearts on a String. Sweetheart vine. Rosary vine. Heart shaped leaves. The most desirable species. 50c.

C. debilis. Cylindrical leaves. Rapid grower. 35c.

C. Barkleyi. The oblong leaves are pointed at the apex. 60c.

Cacti and Succulents. Small rooted plants for a dish garden or pots. 10 assorted Succulents and/or Cacti for \$1.00. 20, all different, \$1.90.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include Billbergia, Aregelia, Aechmea, and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical, or semitropical epiphytes and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture** of Aechmea and Aregelia is the same.

Aechmea calyculata. Bright green leaves, yellow flowers. \$2.00.

Billbergia calophylla. Large, bronze-green foliage with contrasting bars of grey. Very large, showy inflorescence of blood-red bracts and blue flowers. \$2.00.

Billbergia Burkholtzi. Tall, slender, erect green leaves. Rose bracts, lavender fls. \$2.00.

B. distachia. Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 75c.

B. Elvenia Slosson (Nutans x Alberti). Tall plant with very attractive flowers in spring. It takes a lot of postage and its fine quality makes it cost \$3.00 each.

B. nutans. Mid-winter, beautiful inflorescence on small plants. Fine pot plants. 75c.

B. pyramidalis. Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

B. Rubro-cyanea. Most colorful foliage, red and green spotted cream. Green fls. edged blue. Crimson bracts. \$1.00.

B. speciosa. Green lvs., striped on back. Green fls., tipped blue. Rose bracts. \$2.00.

B. Theodore L. Meade. Green lvs. and large, beautiful inflorescence, continuous all year on new growths. \$1.50.

B. thrysiflora (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

B. Zebrina. Lvs. banded white on back. Salmon bracts, green fls. \$1.50.

Collection all 12 varieties. Express f.o.b., \$16.50. By this method we can send larger plants. By mail, postpaid, \$18.25.

Big 4 collection. Nutans, Distachia, Rubro-cyanea and Zebrina. Value \$3.50. Price \$3.25. Include Special Handling for these plants by mail. If you order them to come by express, f.o.b., we send much larger plants.